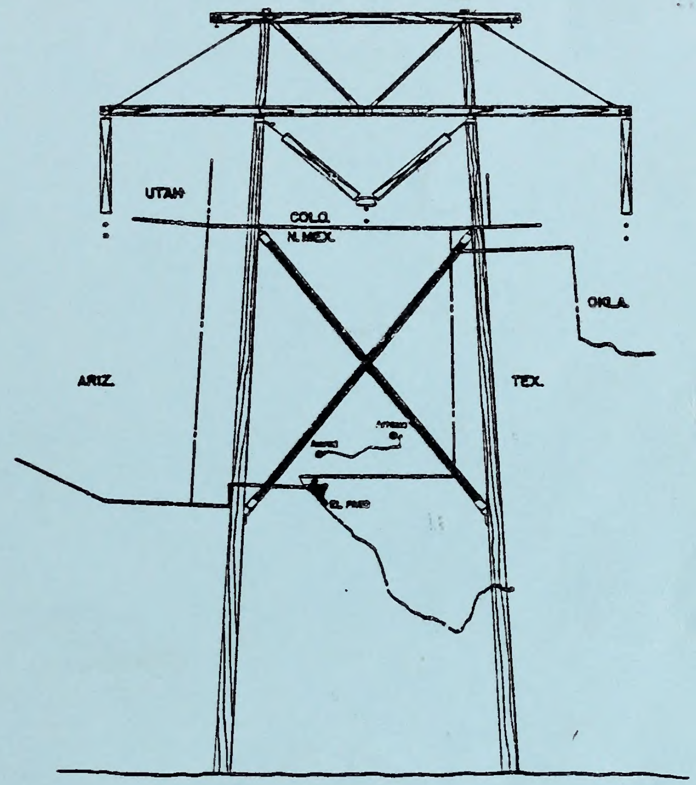
BLM LIBRARY
88065458

ENVIRONMENTAL ASSESSMENT

FOR THE

EL PASO ELECTRIC COMPANY
PROPOSED 345 KV TRANSMISSION PROJECT
OTERO, CHAVES, AND EDDY COUNTIES, NEW MEXICO



PREPARED BY:
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

LAS CRUCES DISTRICT OFFICE
WHITE SANDS RESOURCE AREA

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

IN REPLY
REFER TO: 1792

February 11, 1983

Enclosed for your review and comment is the Environmental Assessment for El Paso Electric Company's proposed 345 KV Transmission Project from Southwestern Public Service Company's Eddy County Substation near Artesia, New Mexico, to their Amrad Substation on the White Sands Missile Range. The document was prepared by the Bureau of Land Management, White Sands Resource Area, Las Cruces District Office, with contributions from the Carlsbad Resource Area, Roswell District Office.

The purpose of this assessment is to indicate the probable impacts of the proposed power line to ensure that these impacts are considered in the decision-making process. Impact analysis was based upon information supplied by Federal, state, and local agencies, and interested private individuals.

We would appreciate any comments pertaining to the environmental, social, and economic effects of the proposed action. The comment period will run through March 13, 1983. All comments received will be considered in the decision-making processing. Your comments should be sent to:

Larry Nunez
White Sands Resource Area Manager
Bureau of Land Management
P. O. Box 1420
Las Cruces, New Mexico 88004
(505) 523-5571

Sincerely yours,

Edward F. Habich II
for

Larry Nunez
White Sands Resource Area Manager

Enclosure

#50139867
ID 88065458

HD
243
.N6
T7367
1983

ENVIRONMENTAL ASSESSMENT
FOR THE
EL PASO ELECTRIC COMPANY
PROPOSED 345 KV TRANSMISSION PROJECT
OTERO, CHAVES, AND EDDY COUNTIES, NEW MEXICO

Prepared by:
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Las Cruces District Office
White Sands Resource Area

Contact: Konnie Andrews, Team Leader
(505) 523-5571
FTS 571-8353

January, 1983

Bureau of Land Management
Library
Bldg. 50, Denver Federal Center
Denver, CO 80225

NOTICE

THIS ENVIRONMENTAL ASSESSMENT SHOULD BE RETAINED TO BE USED IN CONJUNCTION WITH THE FINAL DOCUMENT. THE FINAL DOCUMENT WILL INCLUDE THE MODIFICATIONS AND CORRECTIONS WHICH SHOULD BE MADE TO THIS ENVIRONMENTAL ASSESSMENT AS A RESULT OF PUBLIC COMMENT AS WELL AS A RECORD OF PUBLIC COMMENTS AND THE RESPONSES TO THOSE COMMENTS.

TABLE OF CONTENTS

Page No.

Summary

Chapter 1 - Proposed Action and Alternatives 1-1

- Introduction 1-1
- Purpose and Need for the Proposed Action 1-1
- The Proposed Action 1-1
  - Location of the Proposed Action 1-3
  - Description of the Proposed Action 1-3
  - Construction of the Transmission Line 1-4
  - Construction of the Substation 1-6
  - Restoration and Cleanup 1-6
  - Operation and Maintenance 1-6
  - Construction Workforce and Schedule 1-6
  - Compliance and Monitoring 1-6
- Mitigating Measures and Stipulations 1-7
  - Mitigating Measures Known Before Preparation of EA 1-7
  - Mitigating Measures Developed During the Analysis Process 1-11
  - Stipulations Developed by Other Agencies 1-13
- Alternatives 1-15
- Authorizing Actions 1-15
  - Bureau of Land Management 1-15
  - Department of the Army 1-16
  - Bureau of Reclamation 1-16
  - State of New of New Mexico 1-16
  - Other Local Agencies 1-16
- Interrelationship with Existing Documents 1-16

Chapter 2 - Affected Environment, Anticipated Impacts and Recommended Mitigation 2-1

- The Proposed Action 2-2
  - Soils 2-2
  - Water Resources and Floodplains 2-11
  - Vegetation 2-8
  - Wildlife 2-15
  - Threatened or Endangered Species 2-16
  - Livestock Grazing 2-12
  - Visual Resources 2-17
  - Noise 2-12
  - Cultural Resources 2-18
  - Social and Economic Conditions 2-12
- No Action Alternative 2-14
- Unavoidable Adverse Impacts 2-14
- Relationship Between Short-term Use and Long-term Productivity 2-21

TABLE OF CONTENTS
(Continued)

Page No.

Chapter 3 - Consultation and Coordination 3-1

The Scoping Process 3-1
List of Preparers and Contributors 3-2
Preparers
Contributors
Public Review of EA 3-2

Appendices

Appendix A - Description of the Proposed Action - Supplemental Information A-1
Appendix B - Compliance and Monitoring Plan A-2

References R-1

List of Maps

Map A - General Location Map 1-2
Map B - General Soil Map 2-3
Map C - Vegetative Communities 2-9
Map D - Visual Resource Management 2-18

List of Tables

Table 1 - Soil Characteristics of the General Soil Mapping Units 2-4
Table 2 - Livestock Grazing 2-13

SUMMARY

The El Paso Electric Company (EPE) has proposed the construction of approximately 125 miles of 345 kilovolt transmission line from Southwestern Public Service Company's (SPS) Eddy County Substation near Artesia, New Mexico, to their Amrad Substation located approximately 8 miles northwest of Orogrande New Mexico, in the White Sands Missile Range. Approximately 85.5 miles or 68% of the lands crossed by the Proposed Action are administered by the Federal Government.

Two public scoping meetings were held to solicit public views on the Proposed Action. The meetings indicated that the major concerns dealt with landowners who did not want the line crossing their privately-owned land, and interference of line construction with lambing season in sheep grazing areas. Consultation was also made with various Federal, State and local agencies.

As a result of issues identified through the scoping process, EPE realigned the Proposed Action to avoid conflicts with private landowners. Mitigation was proposed during the scoping process by the Bureau of Reclamation and the Department of the Army for lands administered by their agencies. Additional mitigation has been developed by the BLM during impact analysis.

Route alternatives to the Proposed Action were considered during scoping but not fully analyzed because impacts resulting from any feasible alternative would be very similar to those resulting from the Proposed Action. No other alternatives were identified. Therefore, the only alternative analyzed was the No Action Alternative.

The BLM has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality Regulations (40 CFR 1500-1508).

A summary of impacts anticipated as a result of construction, operation, and maintenance of the Proposed Action follows.

PROPOSED ACTION
SUMMARY IMPACT TABLE

Environmental Component	Anticipated Impact
Climate	None
Air Quality	Minimal; slight decrease in air quality may occur during construction
Geology (Geologic Hazards)	Sinkholes occur, but there is no history of resultant hazards to construction and development in area
Mineral Resources	Any conflicts with orthodox well drilling locations can be easily resolved at the time application to drill is made
Paleontology	None
Soils	Potential for increased compaction and erosion; long-term impacts minimized through proper mitigation
Water Resources	Minimal; channel disturbance could cause increased sediment load
Floodplains	Minimal
Vegetation	Temporary loss of vegetation along ROW during construction phase; blading may be necessary in areas of low reclamation potential
Wetlands	None
Wildlife	Minor loss of habitat
Threatened or Endangered Species	Potential destruction of nesting areas for the Bell's vireo

PROPOSED ACTION
SUMMARY IMPACT TABLE
(continued)

Environmental Component	Anticipated Impact
Livestock Grazing	Potential for increased loss of lambs during lambing season; also minor disruption of livestock grazing patterns and temporary loss of vegetation
Agriculture (Prime and Unique Farmlands)	None
Visual Resources	Moderate impact to travelers between MP 21 to 27 and 90 to 100; potential for skylining between MP 60 and 75 and 81 and 90
Cultural Resources	Minor disturbance to 47 sites along the proposed route
Noise	Increased noise levels during construction
Land Use	Minimal
Recreation	None
Wilderness Resources	None
Areas of Critical Environmental Concern	None
Transportation Networks	Minimal
Social and Economic Conditions	Lower energy prices for EPE and Texas-New Mexico Power (TNP) consumers; increased reliability of power supply due to diversification

CHAPTER 1
PROPOSED ACTION AND ALTERNATIVES

INTRODUCTION

On November 13, 1981, the El Paso Electric Company (EPE) applied to the Bureau of Land Management (BLM) for a right-of-way (ROW) grant to cross public lands. The BLM is preparing this Environmental Assessment in accordance with the National Environmental Policy Act and the regulations of the Council on Environmental Quality (43 CFR 1500-1508).

EPE proposes to build approximately 125 miles of 345 kilovolt (KV) transmission line from Southwestern Public Service Company's (SPS) Eddy County Substation near Artesia, New Mexico to their Amrad Substation located approximately 8 miles northwest of Orogrande, New Mexico. Approximately 55.6 miles of the proposed line would cross public lands with an additional 29.9 miles on lands withdrawn for the McGregor Military Range. The ROW would be 100 feet wide. Map A shows the general location of the proposed facilities.

PURPOSE AND NEED FOR THE PROPOSED ACTION

The interconnection of the electric transmission systems of SPS and EPE is a project to enable an electric energy transfer between the service areas of the companies. SPS has under construction additional coal-fired generating facilities, and will furnish to EPE and Texas-New Mexico Power (TNP) capacity and energy, reducing the usage of gas and oil for generation. Economic evaluation of this interconnection indicates a benefit to customers of EPE and TNP by lowering the fuel cost of energy. The interconnection is planned to provide diversification of energy sources and increase system reliability.

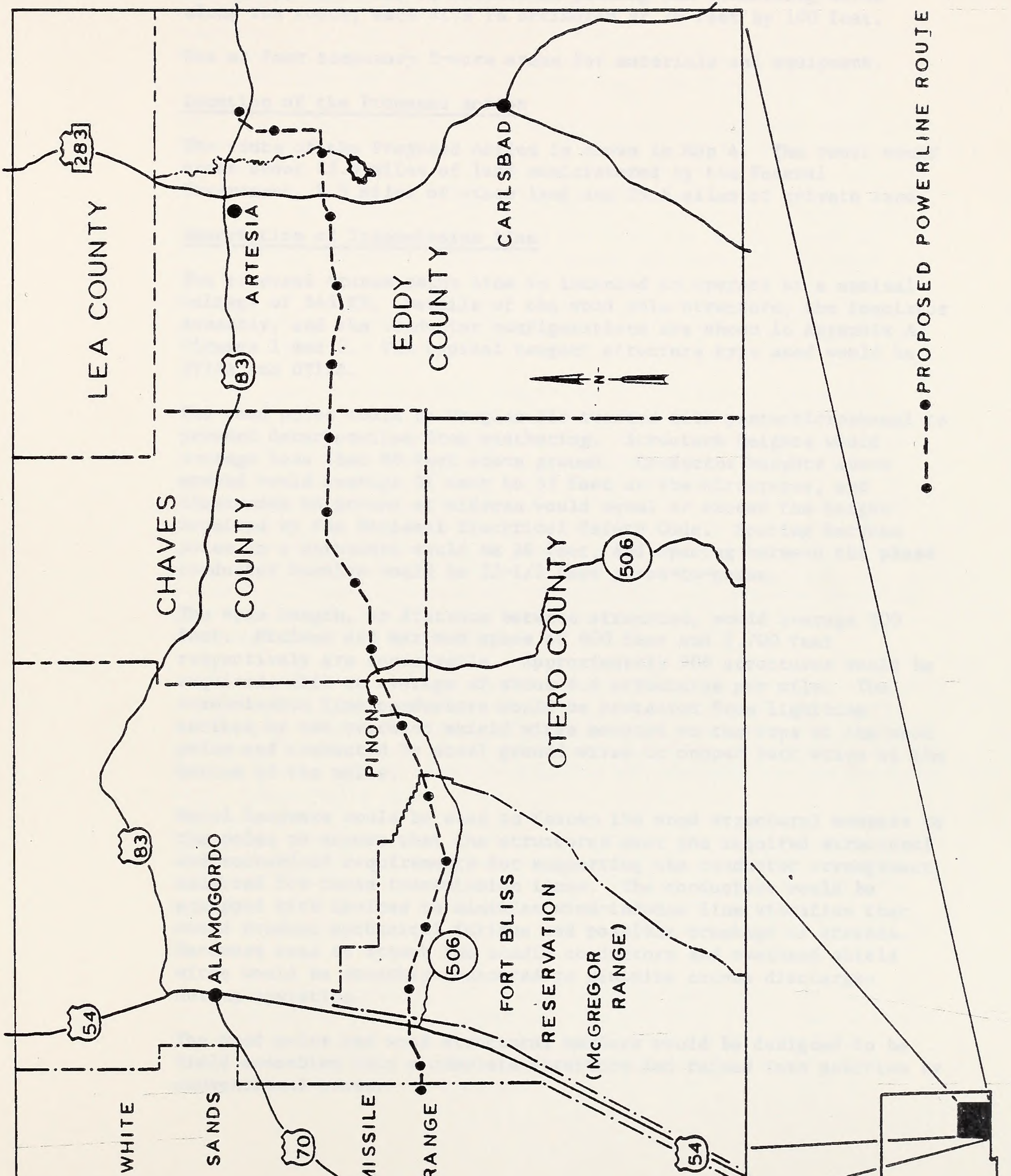
THE PROPOSED ACTION

The following project components, including construction, operation and maintenance are considered in this Environmental Assessment:

> Approximately 125 miles of single circuit 345 KV transmission line; 900 wood modified "H-frame" structures would be needed to support the line.
>
> Expansion of Amrad Substation to include transmission line dead-end tower, transformation, circuit breakers, bus-bars, and other apparatus for 345 KV to 115 KV conversion.
>
> Use of existing access roads and cross-country travel along the ROW, where feasible, and the constructon of access roads from existing roads and trails where ROW travel is not feasible (primarily from the east border of McGregor Range to the west border of Eddy County) is being proposed.

MAP A

EL PASO ELECTRIC'S PROPOSED 345 KV TRANSMISSION LINE FROM ARTESIA TO PAXTON SIDING



Use of approximately 50 additional pulling and tensioning sites along the route; each site is estimated at 70 feet by 100 feet.

Use of four temporary 2-acre areas for materials and equipment.

Location of the Proposed Action

The route of the Proposed Action is shown in Map A. The route would cross about 85.5 miles of land administered by the Federal Government, 9.5 miles of state land and 29.5 miles of private land.

Description of Transmission Line

The proposed transmission line is intended to operate at a nominal voltage of 345 KV. Details of the wood pole structure, the insulator assembly, and the conductor configurations are shown in Appendix A, Figures 1 and 2. The typical tangent structure type used would be DT12A and DT12B.

The wood poles would be Douglas Fir treated with pentachlorophenol to prevent deterioration from weathering. Structure heights would average less than 80 feet above ground. Conductor heights above ground would average 51 feet to 55 feet at the structures, and clearances to ground at midspan would equal or exceed the height required by the National Electrical Safety Code. Spacing between poles in a structure would be 26 feet, and spacing between the phase conductor bundles would be 23-1/2 feet phase-to-phase.

The span length, or distance between structues, would average 800 feet. Minimum and maximum spans of 400 feet and 1,700 feet respectively are conceivable. Approximately 900 structures would be required, with an average of about 6.6 structures per mile. The transmission line conductors would be protected from lightning strikes by two overhead shield wires mounted on the tops of the wood poles and connected by steel ground wires to copper butt wraps at the bottom of the poles.

Metal hardware would be used to fasten the wood structural members to the poles to ensure that the structures meet the required structural and mechanical requirements for supporting the conductor arrangement selected for these transmission lines. The conductors would be equipped with devices to minimize wind-induced line vibration that could produce mechanical fatigue and possible breakage of strands. Hardware used to attach the bundle conductors and overhead shield wires would be smoothly contoured to minimize corona discharges during operation.

The wood poles and wood structural members would be designed to be field assembled into a complete structure and raised into position by conventional booms.

Construction of the Transmission Line

Construction of the proposed 345 KV transmission line would follow a sequence of survey, access improvements, structure assembly and erection, conductor stringing, tensioning, and site restoration.

Table 1 in Appendix A shows the major pieces of equipment which are normally used in the construction of power lines of this type. The total number of vehicles and pieces of equipment will vary; however, EPE estimates that 20 vehicles might visit a given structure site and that 30 to 40 vehicles would pass over a given piece of road. Where feasible, construction crews would use existing access roads or travel cross-country rather than blading new roads. In areas of rough terrain or dense vegetation, a construction road would have to be built to provide access to, or along, the right-of-way. Spur roads would be required to provide access from existing roads to the structure sites in some instances.

Storage space for structural components (i.e., poles, conductors, cross members, etc.) would be obtained adjacent to railroads, highways, or roads. Such staging areas would service construction for various lengths of the line, depending on the availability of suitable roads. If railroads or existing roadways would be too remote, staging areas would be set up along the route at intervals depending on the availability of haul roads, terrain, and other factors. Staging areas set up along the route would be approximately 2 acres or less in size. Existing roads would be used wherever possible for the transportation of materials and equipment from the storage yards to the points where they would be needed along the transmission line right-of-way.

A 70' x 100' area would be required at each tower site to provide a suitable working surface for equipment and assembly of the towers. Depending on the nature of vegetation and terrain, some amount of clearing or leveling might be required to provide a suitable assembly pad. A grader or cat would be used for all clearing for construction roads and assembly pads.

Explosives would be used if rock is encountered where the poles would be set. A drilling rig and auger mounted on a cat would drill the holes into which the poles and anchors for the structures would be placed. These holes are approximately 3 feet in diameter, only slightly larger than that of the poles, and average approximately 11 feet deep.

Flatbeds, pole trailers, "A" frames, and forklifts would be used to haul and unload materials along the right-of-way. With the materials on site, the structures would be assembled by the framing crew. Pickups or carryalls would be used to transport the larger crews performing construction operations.

The setting crew would follow behind these operations. This crew would use a setting rig pulled by a cat (or a crane mounted on a large flatbed truck), a winch truck, and a compressor truck to set and adjust the structure. The holes would then be backfilled and tamped to firm the structure. What little excess excavated material that would be left after backfilling would be leveled or distributed around the base of the pole. Concrete footings would not be required for wood pole structures.

After the structures were set, the shield wires would be sagged and clipped in. The conductors would be installed under tension, using a small tractor to pull a cable or sock line (5/8" nontwisting steel cable) from tower to tower. The "sock" line would then be used to pull the conductor from tower to tower. A truck and a heavy duty vehicle (Puller), equipped with mechanical cable reels, would be stationed at one end of a pull up to 15,000 feet in length. At the other end of the pull the conductor reels and tensioner would be stationed.

Temporary bridge poles would be erected on each side of highways and roads to ensure that the conductor would maintain adequate clearance above the roads allowing safe, uninterrupted travel during installation. Flagmen would be located at all road crossings. In rough terrain, the speed might be reduced to 3-5 mph. This method of stringing line under tension poses little possibility for damage to the conductor, holding to a minimum future operational problems in radio and television interference, electromagnetic radiation, corona losses, and structural integrity. Once the conductor would be fully threaded, a splicing rig would come through to splice the conductors together.

"Clipping" crews would move in at this point to secure the conductor bundles to the insulator strings and remove the temporary pulleys. These crews usually consist of three men and a vehicle equipped with a high lift used to hoist men and equipment up the towers. All structure hardware would be grounded, as would all adjacent fences, gates, and similar devices. Where it becomes necessary to pass through fences, the fence strands would be cut and an extra post added to make a permanent "Texas" style gate. All gates would be locked with only private owners, land management agencies, and EPE inspection crews having keys. On well-traveled portions of the right-of-way cattle guards with adjacent gates would be installed.

At each crossing of a pipeline by the proposed power lines, the transmission structures would be installed 100 feet from the pipeline. A vertical ground clearance equal to or greater than the requirements of the National Electrical Safety Code would be maintained at these crossings. The BLM would stipulate the need for additional requirements on crossings of existing facilities in connection with the right-of-way grant.

Construction of the Substation

EPE proposes the construction of a substation complex adjacent to the existing Amrad Substation, located within White Sands Missile Range, consisting of a 345 KV Section and a 115 KV Section. The White Sands Missile Range, and not BLM, would be responsible for authorizing this substation.

Restoration and Cleanup

Normal cleanup during construction would eliminate most cleanup during the final phase. Waste and scrap materials would be removed from the ROW to local landfills according to local regulations and agreements with the landowner or manager. Any lands disturbed by heavy equipment and trucks would be restored to the requirements of the landowner or manager.

Operation and Maintenance

Once the line would be finished, the access road would be used only for routine line patrols with 4-wheel drive vehicles and any maintenance that should be required. Maintenance would depend on the patrol findings, with little maintenance anticipated. When it becomes necessary to perform maintenance on any structure, the structure would be reached by equipment which would generally constitute a high reach and a few pickup trucks. These vehicles would use existing roads where possible, traveling cross-country only when necessary.

Construction Work Force and Schedule

The total work force required to complete the phases of construction described above would be 30 to 65 people. These people would normally take up temporary housing in nearby communities and commute to the job site on a daily basis. Many would have their own trailers and park them where connection facilities are available; others would occupy rental houses and apartments. Only those supervisors and inspectors who occasionally visit the work site would be using motel accommodations.

Construction time is estimated to be 9 months, beginning in Spring of 1983.

Compliance and Monitoring

The White Sands and Carlsbad Resource Areas of the BLM are responsible for ensuring that the applicant complies with all provisions and any special stipulations that might be a part of this ROW grant, except those imposed by other agencies on lands under their jurisdiction. A compliance and monitoring plan for the project can be found in Appendix B.

MITIGATING MEASURES AND STIPULATIONS

This section contains three categories of mitigating measures:

1. Mitigating Measures Known Before Preparation of EA, including those standard stipulations used by either the Las Cruces or Roswell District Office prior to the preparation of this EA and those that were anticipated before the initial analysis process,

2. Mitigating Measures Developed during the Analysis Process, including those mitigating measures that were recommended as a result of the assessment of impacts, and

3. Stipulations Developed by Other Agencies, including those measures to be enforced by the Bureau of Reclamation and Department of the Army on lands over which they have jurisdiction.

EPE has requested that a qualified BLM employee be present, particularly during the early phases of construction, to answer questions concerning stipulations.

Mitigating Measures Known Before Preparation of EA

1. Grantee shall conduct all activities directly or indirectly associated with the construction, operation, and maintenance of this facility within the limits of this right-of-way. In the event that areas outside of the right-of-way (including access roads, temporary storage areas, etc.) are needed, grantee shall obtain a separate authorization for that use.

2. Grantee shall schedule and attend a preconstruction conference with the authorized officer or his representative prior to commencing any construction activities on this right-of-way. The grantee or his representative and all of his contractors or agents involved with construction under this right-of-way shall attend this conference. The grantee shall contact the authorized officer or his representative at least five (5) days prior to the anticipated start of construction to schedule this conference. The authorized officer is the BLM District Manager. The designated representative for this right-of-way in Otero County is:

   Mr. Larry Nunez, Area Manager, White Sands Resource Area
   P. O. Box 1420
   Las Cruces, New Mexico 88004
   (505) 523-5571

The designated representative for this right-of-way in Chaves and Eddy Counties is:

G. Ben Koski, Area Manager, Carlsbad Resource Area
101 E. Mermod
Carlsbad, New Mexico 88250
(505) 887-6544

3. Access Requirements

   a. No roads will be built in conjunction with this right-of-way in areas where the terrain will allow vehicles to manuever without the aid of such roads.

   b. If construction of an access road is necessary, a separate Design and Operations Plan for the road shall be submitted to the authorized officer. The plan must be approved before any construction begins.

   c. Track vehicles will provide access to those sites along the right-of-way where conventional vehicles cannot be used without causing excessive surface disturbance as determined by the authorized officer.

4. During construction, grantee shall regulate access and vehicular traffic as required to protect the public, wildlife, and livestock from hazards associated with the project. Grantee shall permit free and unrestricted public access to and upon the right-of-way except in areas designated as restricted by the grantee. All restricted areas shall be approved in writing by the authorized officer.

5. Each existing fence to be crossed by the right-of-way will be braced and tied off before cutting so as to prevent slacking of the wire. The opening will be protected as necessary during construction to prevent the escape of livestock and upon completion of construction, the fence will be restored to a condition which is equal to or better than the original. Cattle guards and adjacent gates which are of a suitable width will also be installed in any fence where a road created during this construction is to be regularly traveled.

   If a natural barrier which is being used for livestock control is broken during construction, EPE will adequately fence the area to prevent drift of livestock.

6. Construction activities requiring intermittent traffic interruption will be completed as quickly as possible. Safety procedures (e.g., flagmen, signs) will be followed to ensure safe, smooth traffic flow. Roadway obstructions and safety hazards will be minimized during construction by installing overhead guard pole safety barriers over the highway, designed

to prevent the conductor from dropping during stringing and clipping operations. The barriers will allow safe, uninterrupted traffic flow along roadways while conductor stringing operations are underway. Potential traffic interference because of movement of construction equipment will be reduced by scheduling the movement of construction equipment during hours of light traffic flow.

7. Vegetation to be cleared from the right-of-way will be limited to that necessary for pole installation. The grantee will smooth all distributed areas to conform as nearly as practical with the adjacent terrain. The grantee shall contact the District Manager, Bureau of Land Management, for written instructions as to reseeding. If the first reseeding is not successful, as determined by the District Manager, one additional attempt will be required.

8. The grantee shall comply with the applicable Federal and State laws and regulations concerning the use of pesticides (i.e., insecticides, herbicides, fungicides, rodenticides, and other similar substances) in all activities and operations under this grant. Emergency use of pesticides may occur with written approval from the authorized officer. A pesticide shall not be used if the Secretary of the Interior has prohibited its use. A pesticide shall be used only in accordance with its registered uses and within other limitations if the Secretary has imposed limitations. Pesticides shall not be stored on public lands.

9. Grantee shall protect all survey monuments, witness corners, reference monuments, and bearing trees within this right-of-way against disturbance during construction, operation, maintenance, and rehabilitation. If any monuments, corners, or accessories are destroyed, obliterated, or damaged during construction, operation, or maintenance, grantee shall notify the BLM.

10. Several specific construction measures will be implemented in areas of washes, arroyos, and rivers to lessen impacts to soils, vegetation, surface waters and runoff patterns. These measures include: use of ditches, culverts, and water bars to control runoff and erosion along temporary and permanent access roads; grading and revegetating disturbed areas and careful planning of stream crossings to minimize modification of channel hydraulics and the introduction of sediments and contaminants to stream channels.

11. The period of time that trenches and other excavations are left open shall be kept to a minimum compatible with construcion requirements.

12. Care will be taken by the grantee to assure that scenic values are not damaged in the disposal of waste materials. Any large rocks which are left in the area as a result of construction activities will be placed so that they do not detract from the scenic view and do not hinder the movement of livestock or of big game animals. These residual rocks will not be piled or left in rows.

13. Prior to removing any mineral materials, such as caliche or sand and gravel which would be removed from any existing or proposed federal source, authorization must be obtained from the BLM.

14. Any complaints about radio or television interference identified as a result of the construction of the Proposed Action will be investigated on a case-by-case basis to determine their validity, probable cause, and potential solution. If the current project is determined to be causing the interference, action will be taken to solve the problem.

15. Grantee shall meet all the requirements contained in Suggested Practices for Raptor Protection on Powerlines. Prior to construction, grantee shall provide the authorized officer with drawings which show phase spacings, configurations, and grounding practices for this power distribution line. Grantee shall modify any structures not in conformance with Suggested Practices for Raptor Protection on Powerlines as determined by the authorized officer.

16. Avoidance of cultural sites, where possible, will be accomplished by the following measures:

    a. flagging of all archaeological sites prior to construction,

    b. restricting vehicle travel to within the right-of-way (on existing roads if possible) except where terrain and archaeological sites prohibit,

    c. locating transmission structure and stringing and tensioning sites away from archaeological sites, and

    d. walking the leadline across any archaeological site during conductor or shield wire stringing.

    If avoidance is not possible, and further mitigation is warranted, compliance with all appropriate state, Federal, and local statutes which provide for excavation and collection of cultural materials will be made.

17. Any cultural resource (historic or prehistoric site or object) discovered by the grantee, or any person working on his behalf, shall be immediately reported to the authorized officer. Grantee shall suspend all operations in the area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the BLM to determine appropriate actions to prevent the loss of significant cultural values.

18. Prior to abandonment of the grant, the grantee shall contact the authorized officer to arrange a joint inspection of the grant area. The inspection will be held to agree on acceptable abandonment and rehabilitation plan. The authorized officer must approve the plan in writing prior to the grantee commencing any abandonment and rehabilitation activities.

19. It shall be the responsibility of the grantee to comply with the construction practices and mitigating measures established by 33 CFR 323.4 which set forth the parameters of the "nationwide permit" required by Section 404 of the Federal Water Pollution Control Act. If the proposed action exceeds the parameters of the nationwide permit, the grantee shall obtain an "individual permit" from the appropriate office of the Corps of Engineers and provide BLM a copy of that permit prior to commencing actual construction. Failure to comply with this requirement shall be cause for revocation of this right-of-way grant.

Mitigating Measures Developed During the Analysis Process

1. In order to minimize soil compaction and watershed damage during muddy or wet periods, the District Manager, Bureau of Land Management, may prohibit construction of the power line until the ground is sufficiently dry.

2. Rock mulches will be used for soil stabilization in areas where reseeding is not feasible, as determined by the BLM.

3. Access roads developed in conjunction with this ROW will be designed to use natural corridors and avoid steep slopes where possible.

4. To prevent sediment and ground water contamination, no dumping of any type of waste material will be allowed.

5. All roads will be designed to cross drainages as near to a 90° angle as possible to minimize channel disturbance.

6. Construction will not occur from March 15 to June 15 in areas where sheep are grazed without specific written permission from the BLM.

7. In areas of dense vegetation in riparian and pseudoriparian communities, clearing will be minimized by:

   a. selecting alternate routes to avoid dense vegetation, or

   b. selective clearing after consultation with the BLM or land manager/owner, and

   c. making maximum use of existing roads and trails where possible (e.g., Fourmile D).

8. All access roads other than those used for maintenance shall be closed to vehicular travel after construction is complete.

9. Aircraft visual detection devices shall be spaced evenly on the power line where it intersects the Pecos River and adjacent floodplain to improve line visibility for migrating birds.

10. Raptor nests built on transmission towers will not be removed without consultation and coordination with the BLM and other involved agencies.

11. Pole structures will be placed below crests and other high points to avoid silhouetting between Mileposts (MP) 60 and 75 and MP 81 and 90 (See Map D).

12. Vegetation will be cut or crushed in preference to bulldozing. Bulldozing will be permitted only when necessary and specifically approved by the BLM. All blading will be spread evenly across the disturbed area.

13. Diagnostic artifacts found at EPE cultural sites #5 and #28 will be collected by a BLM field inspector prior to construction activities in these areas.

14. The following EPE cultural sites (Wilson, 1983) will be flagged by an archaeologist familiar with them, and all vehicular travel shall be routed around them if possible:

    EPE Site Nos. 2, 3, 4, 7, 8, 9, 10, 11, 12, 17, 23, 25, 26, 30, 31, 36, 42, 47

    If necessary, a fence shall be built to deflect traffic away from the site.

15. EPE Site Nos. (Wilson, 1983) 2, 3, and 4 will be surface collected, and subsurface testing will be done. The location and number of test pits will be determined by a qualified archaeologist and shall not encompass more than 10 percent of the site.

16. All access roads, cable pulling stations, and other areas needed outside of the ROW shall be cleared by a qualified contract archaeologist. As the actual pole locations are determined along the ROW, they will be checked against the archaeological site locations. If the two coincide, the pole location shall be moved to avoid the site.

Stipulation Developed by Other Agencies

A. Fort Bliss' Stipulations for Construction and Operation of the 345 KVA Electric Line Across McGregor Range:

1. All entrances and exits from McGregor Range for personnel and equipment will be on New Mexico Route 506 from the east or west.

2. Clearance to enter McGregor Range.

   a. A permit will be issued to enter McGregor Range by Range Enforcement, Provost Marshal's Office, Building 117, Telephone 568-1898.

   b. Prior to each entry to and after each exit from the Range, the Range Enforcement Office at 568-1898 will be notified.

   c. Prior to each entry to and after each exit from the Range, Range Command S-3, must be notified as follows:

      (1) Duty Hours - S-3 Schedules, 569-9479/9505.

      (2) Weekend and Off-duty Hours - Range Duty Office, 569-9472/9519.

3. To avoid any buried lines or cables a one time clearance with the Master Planner Directorate of Engineering and Housing is required. Telephone number is 568-7293.

4. The El Paso Electric Company (hereinafter referred to as the Company) agrees that it shall assume all liability for and that the United States Government (hereinafter referred to as the Government) shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, or for damages to the property of the Company, its agents, servants, or employees, or others who may be on said premises at the invitation of any one of them, arising from Governmental activities on the said premises. The Company also does hereby agree to indemnify the Government against any legal or equitable action which may be brought against the Government arising out of or in connection with an action by the Company while on the said property. Further, the Company assumes any and all liability for damage to or destruction of property of the Government and personal injury to personnel on the said property arising out of the Company's actions while operating on the said property.

5. Missile Firing Schedule.

   a. El Paso Electric Company, Mr. James Stremming, will be furnished a weekly missile firing schedule. This will assist in planning during the survey and construction periods. The schedule is subject to change; therefore, telephone confirmation of status is recommended.

   b. No personnel will be permitted inside the Range during missile firing periods.

   c. Equipment may be left on the Range during firing periods at the risk of El Paso Electric Company or the owner in the case of contractors.

6. An as-built drawing giving the geographic location of the power line and each supporting structure will be furnished Fort Bliss for accurate revision of existing Army, USGS, and Aviation maps and charts of McGregor Range.

7. Laser and live firing operations.

   a. Extensive laser and live firing operations occur east of US Highway 54 for a distance of 15 miles and from one mile south of New Mexico Route 506 to 22 miles south.

   b. Live firing is with 40MM cannon ammunition with a range of about 16 kilometers (9.5 miles).

   c. Lasing outside the prohibited range area is not dangerous to the naked eye, but could be a hazard if the eye is magnified by glasses or binoculars.

   d. Personnel must be cautioned not to enter the prohibited firing range south of New Mexico Route 506 and not look in the direction of the firing range with any eye magnification.

8. New Mexico Department of Game and Fish, in cooperation with the Bureau of Land Management and the U.S. Army Air Defense Center conducts a special hunt on McGregor Range each year. During the construction phase, El Paso Electric Company personnel will not be permitted to enter the Range at the time of the scheduled hunt.

B. Bureau of Reclamation Stipulations for the Pecos River Floodplain

   1. The permanent service road(s) should be stabilized using caliche or like material. The road(s) should meander within the right-of-way (ROW). Temporary construction roads should also meander, but need not be caliche stabilized.

   2. All equipment staging areas must be outside the floodplain.

3. Because of the proximity of the proposed route to the reservoir, no chemical/herbicide treatment of the ROW will be allowed. All cleared brush (predominantly salt cedar) shall be piled along the edge of the ROW. Brush piles will not be larger than 40 feet by 40 feet, and there will be at least 3 feet between piles to allow for wildlife movement.

4. The cleared ROW shall be seeded with four-wing salt bush (Atriplex canescens) under the transmission lines. If the ROW is wide enough to prevent potential line obstruction, small groups of 8-10 cottonwood saplings each will be planted in irregular patterns with 40 feet between trees. Temporary fencing and watering of the cottonwoods may be necessary.

5. Due to risk of flooding and inundation, no construction can occur from June 1 through October 31. Footing design and tower construction shall be appropriate for a flood zone. No construction will be allowed below elevation 3270.4. The proposed Brantley Dam and Reservoir will have a maximum water surface of 3302.5 feet and a maximum flood pool of 3285.3 feet. El Paso Electric Company must comply with all appropriate safety regulations with regard to these water levels.

6. Extensive oil and gas development is presently occurring in the immediate area of the proposed crossing. The crossing route shall be coordinated with the exploration companies involved. Contact the Regional Supervisor of Water, Land, and Power, Bureau of Reclamation, Southwest Region, for a proposed production field plan.

ALTERNATIVES

Two alternative routes considered by EPE before deciding on the proposed route were: (1) along U.S. Highway 285, south of the Guadalupe Mountains and (2) northeast along U.S. Highway 82, east of Artesia. These routes were not fully analyzed because it was determined that they were economically unfeasible and less desirable for environmental reasons. No other feasible alternatives were identified during scoping and consultation by the BLM and other agencies. Therefore, the only alternative analyzed in this EA is the No Action Alternative, which is defined as rejection of the ROW application. The No Action Alternative would result in no construction activities.

AUTHORIZING ACTIONS

Bureau of Land Management: The BLM would issue the ROW grant in accordance with Title V of Public Law 94-579, October 21, 1976 (90 Stat. 2743) and the pertinent regulations contained in 43 CFR 2800. The proposed action would require approximately 85.5 miles of ROW across lands administered by the Federal Government. The BLM would also issue temporary use permits (TUPS) for temporary work areas outside of the ROW, in conjunction with this grant. The Las Cruces

District Manager has authority to issue all initial grants and permits necessary to allow construction across public lands. TUPS would be issued on a case-by-case basis as the sites needed for storage, temporary work, and access roads are identified.

Department of the Army Air Defense Center, Fort Bliss: ROW through the McGregor Range would be coordinated with this command with issuance by BLM.

White Sands Missile Range: A ROW grant would be required for the enlargement of substation and transmission line termination. WSMR would address this aspect.

U. S. Bureau of Reclamation: A permit or authorization may be required for the Pecos River crossing.

State of New Mexico: The New Mexico State Highway Department and the State Land Office would issue ROW or easements to cross state land.

The New Mexico State Public Utility Commission requires a Certificate of Convenience prior to construction.

Other Local Agencies: Otero, Chaves, and Eddy Counties would need to issue road crossing permits for county roads before construction.

INTERRELATIONSHIP WITH EXISTING DOCUMENTS

The subject power line will cross areas covered by previously written planning and environmental documents. The proposed action does not conflict with any of the documents developed by either the Roswell or Las Cruces District Offices.

CHAPTER 2
AFFECTED ENVIRONMENT, ANTICIPATED IMPACTS AND MITIGATION

This chapter describes the various environmental elements which would be affected by the Proposed Action, as well as the type of impacts and recommended mitigation. The level of discussion is commensurate with the anticipated degree of impacts. Mitigation measures developed prior to this EA (see Chapter 1) are considered to be part of the Proposed Action and will not be further discussed here.

Impacts for the Proposed Action were analyzed for all of the following resources:

Climate*
Air Quality*
Geology*
Mineral Resources*
Paleontology*
Soils
Water Resources (including floodplains)
Vegetation
Wetlands*
Wildlife
Threatened or Endangered Species
Livestock Grazing
Agriculture (Prime and Unique Farmlands)*
Visual Resources
Recreation*
Noise
Cultural Resources
Land Use*
Wilderness Resources*
Areas of Critical Environmental Concern*
Transportation Networks*
Social and Economic Conditions

Scoping, impact analysis and consultation with appropriate Federal, State and local agencies revealed negligible or no impacts associated with those resources denoted with an asterisk. No further discussion will be provided for these environmental components.

For a summary of impacts to all the above-mentioned resources, refer to the Summary Impact Table at the beginning of this document.

THE PROPOSED ACTION

Soils

Description of Affected Area

Map B shows the general soil mapping units that would be impacted by the Proposed Action. These mapping units consist mainly of soil associations, with some soil complexes. Table 1 indicates the individual soil series that occur within the map units. This table also provides the major physical characteristics of each soil series necessary for analyzing potential impacts. Soil surveys completed by the Soil Conservation Service for Otero, Eddy and Chaves Counties were the source of the soils information.

Anticipated Impacts

Erosion

A most critical issue to consider when examining the possible impacts of a project such as the Proposed Action is soil erosion. Soil erosion is a function of slope, surface texture, permeability, ground cover, and the type, amount and intensity of precipitation. Although annual precipitation in the affected area is low (8-14 inches), much of it comes during short, high-intensity thundershowers and at rates which exceed the soils' absorption rate, thereby creating severe surface runoff. In addition, wind erosion can be severe on certain soil types, causing damage to plants by burying them or shearing off seedlings. Wind erosion can also lead to short-term decreases in air quality.

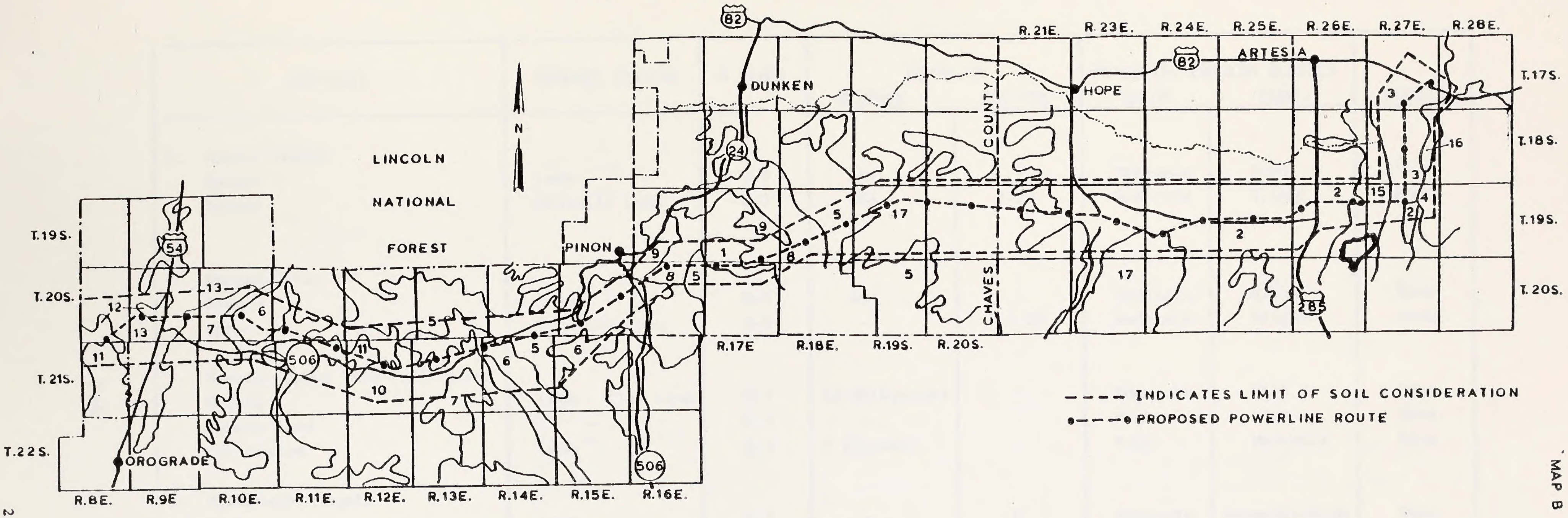
Potential soil erosion classes for both water and wind erosion are given in Table 1. In most instances, these were obtained from the previously mentioned soils surveys; however, in cases where no water erosion classes were given, these were determined using the PSIAC methodology.

Compaction

Many pieces of heavy machinery and vehicles would be used in this project, resulting in increased soil compaction. Both the porosity and the infiltration rate decrease when a soil becomes compacted. On slopes this can lead to accelerated erosion and water runoff. Compaction decreases the productivity of the soil and makes reseeding difficult. For areas which are to be reseeded and have become compacted, tillage would be necessary. Soils are most susceptible to compaction when wet.

The areas where permanent access and maintenance roads and towers sites are to be located would be permanently impacted. Ground cover would be destroyed, soils compacted, infiltration reduced, and runoff increased, all resulting in increased soil erosion.

GENERAL SOIL MAP MAP B



MAP UNITS

1	Reakor-Tencee association: Deep, level to nearly level loams and nearly level to hilly gravelly loams that are very shallow and shallow over indurated caliche
2	Reagan-Upton association: Loamy, deep soils and soils that are shallow to caliche; from old alluvium
3	Reeves-Gypsum land-Cottonwood association: Loamy soils that are very shallow to moderately deep over gypsum beds, and Gypsum land
4	Kimbrough-Stegall association: Loamy soils that are very shallow to moderately deep to caliche; from old alluvium
5	Ector-Rock outcrop: Shallow, well drained, moderately steep to steep soils on limestone hills, and Rock outcrop
6	Lozier-Rock outcrop: Shallow, well drained, nearly level to steep soils on limestone hills, and Rock outcrop
7	Tome-Mimbres: Deep, well drained, nearly level to gently sloping soils on alluvial fans and valley floors
8	Deama-Rock outcrop association: Gently undulating to very steep cobbly loams that are 7 to 18 inches deep over limestone, and Rock outcrop
9	Penasco-Gabaldon Ancho association: Deep, level to gently sloping silt loams and loams and gently undulating to hilly cobbly loams and gravelly loams that are 7 to 20 inches deep over indurated caliche
10	Philder-Armesa-Reyab: Shallow and deep, well drained, nearly level to rolling soils on alluvial fans and uplands
11	Nickel-Tencoe: Deep and shallow, well drained, strongly sloping to moderately steep soils on pediment toe slopes and alluvial fans
12	Bluepoint-Onite-Wink: Deep, somewhat excessively drained and well drained, level to undulating soils on uplands and alluvial fans
13	Pintura-Dona Ana: Deep, somewhat excessively drained and well drained, undulating soils on duned uplands
14	Pena-Cale-Kerrick: Deep, moderately well drained, nearly level to moderately sloping soils soils in upland valleys
15	Arno-Harkey-Anthony association: Loamy, deep soils from recent mixed alluvium
16	Simona-Pajarito association: Sandy, deep soils and soils that are shallow to caliche; from wind-worked deposits
17	Ector-Lozier-Tencee association: Nearly level to hilly cobbly loams and gravelly loams that are 4 to 20 inches deep over limestone or indurated caliche

TABLE 1
SOIL CHARACTERISTICS OF THE GENERAL SOIL MAPPING UNITS

MAP UNIT	SURFACE TEXTURE	% SLOPE	DEPTH TO		POTENTIAL EROSION CLASSES		FLOODING
			BEDROCK	CALICHE	WATER	WIND	
1. Reakor-Tencee							
Reakor	Loam	0-5	60+	-	Moderate	High	None
Tencee	Gravelly Loam	0-5	60+	7-20	Moderate	Slight	None
2. Reagan-Upton							
Reagan	Loam	0-3	60+	-	Moderate	High	None
Upton	Gravelly Loam	0-9	-	2-20	Moderate	Slight	None
3. Reeves-Gypsum Land-Cottonwood							
Reeves	Loam - Clay Loam	0-3	10-36(Gypsum)	-	Moderate	High	None
Gypsum Land	-	0-3	-	-	High	High	None
Cottonwood	Loam	0-3	9 (Gypsum)	-	High	Moderate	None
4. Kimbrough-Stegall							
Kimbrough	Loam	0-3	-	9	Moderate	Moderate-High	None
Stegall	Loam - Clay Loam	0-3	-	18-40	Moderate	Moderate	Occasional
5. Ector-Rock Outcrop							
Ector	Gravelly Loam	20-50	17	-	Moderate to High	Slight	None
Rock Outcrop	-	-	-	-	-	-	-
6. Lozier-Rock Outcrop							
Lozier	Very Gravelly Loam	0-20	4-20	-	Moderate	Slight	None
Rock Outcrop	-	-	-	-	-	-	-

TABLE 1
SOIL CHARACTERISTICS OF
THE GENERAL SOIL MAPPING UNITS

MAP UNIT	SURFACE TEXTURE	% SLOPE	DEPTH TO		POTENTIAL EROSION CLASSES		FLOODING
			BEDROCK	CALICHE	WATER	WIND	
7. Tome-Mimbres							
Tomer	Silt Loam	0-5	60+	-	High	High	Rare
Mimbres	Silt Loam	0-3	60+	-	High	Moderate-High	Rare to Occasional
8. Deama-Rock Outcrop							
Deama	Very Gravelly Loam	0-75	7-20	-	Moderate to High	Slight	None
Rock Outcrop	-	-	-	-	-	-	-
9. Penasco-Gabaldon-Ancho							
Penasco	Cobbly Loam	2-30	60+	7-20	Moderate	Slight	None
Gabaldon	Silt Loam - Silty Clay Loam	0-5	60+	-	Slight	High	None to Rare
Ancho	Loam	1-5	60+	-	Moderate	High	None to Rare
10. Philder-Armesa-Reyab							
Philder	Very Fine Sandy Loam - Loam	0-15	60+	12-20	Slight-Mod.	High	None
Armesa	Very Fine Sandy Loam - Loam	0-5	60+	-	Slight	High	None
Reyab	Loam - Silt Loam	0-5	60+	-	Slight	High	None to Rare
11. Nickle-Tencee							
Nickle	Gravelly Very Fine Sandy Loam to Very Gravelly Loam	1-30	60+	-	Moderate	Slight	None

TABLE 1

SOIL CHARACTERISTICS OF

THE GENERAL SOIL MAPPING UNITS

MAP UNIT	SURFACE TEXTURE	% SLOPE	DEPTH TO		POTENTIAL EROSION CLASSES		FLOODING
			BEDROCK	CALICHE	WATER	WIND	
Tencee	Very Gravelly Sandy Loam or Very Gravelly Silt Loam	0-10	60+	7-20	Moderate	Slight	None
12. Bluepoint-Onite-Wink							
Bluepoint	Loamy Fine Sand	0-5	60+	-	Slight	Very High	Rare
Onite	Loamy Fine Sand	0-5	60+	-	Slight	Very High	None
Wink	Loamy Fine Sand to Fine Sandy Loam	0-3	60+	-	Slight	High	None
13. Pintura-Dona Ana							
Pintura	Loamy Fine Sand - Fine Sand	0-5	60+	-	Slight	Very High	None
Dona Ana	Very Fine Sandy Loam to Sandy Clay Loam	0-5	60+	-	Slight	High	None
14. Pena-Cale-Kerrick							
Pena	Silty Clay Loam - Clay Loam - Loam	0-10	60+	-	Moderate	High	None
Cale	Silt Loam - Loam	0-5	60+	-	Moderate	Moderate	None
Kerrick	Silt Loam - Loam	0-2	60+	21-40	Moderate	Moderate	None
15. Arno-Harkey-Anthony							
Arno	Silty Clay Loam	0-1	60+	-	Slight	High	Rare Occasional

TABLE 1
SOIL CHARACTERISTICS OF THE GENERAL SOIL MAPPING UNITS

MAP UNIT	SURFACE TEXTURE	% SLOPE	DEPTH TO		POTENTIAL EROSION CLASSES		FLOODING
			BEDROCK	CALICHE	WATER	WIND	
Harkey	Very Fine Sandy Loam - Loam	0-1	60+	-	Slight-Mod.	Moderate-High	None-Rare
Anthony	Sandy Loam- Loamy Sand	0-1	60+	-	Slight-Mod.	High	None-Rare
16. Simona-Pajarito							
Simona	Fine Sandy Loam - Loamy Sand	0-3	60+	10-24	Slight	High	None
Pajarito	Loamy Fine Sand - Fine Sand	0-3	60+	-	Slight	High	None
17. Ector-Lozier-Tencee							
Ector	Gravelly Loam	20-50	17	-	Mod. to High	Slight	None
Lozier	Very Gravelly Loam	0-20	4-20	-	Moderate	Slight	None
Tencee	Gravelly Loam - Gravelly Sandy Loam	1-30	60+	7-20	Moderate	Slight	None
Dona Ana							

Recommended Mitigation

In a project of this size, it is difficult to determine precisely where many access roads and tower sites would be located at this time. Because of this, almost all final mitigation for soil impacts would need to be determined during an on-site field examination by a BLM specialist, especially in those sections of the proposed route which contain steep slopes and soils in high water erosion classes. Such an examination might prove the need to establish certain measures which are not discussed in this document. However, some general measures which are recommended are:

1. The use of rock mulches in areas where reseeding is not feasible (to be determined by the BLM).
2. Designing access roads to use natural corridors and avoid steep slopes where possible.
3. Prohibiting construction of the power line during muddy or wet periods.

Vegetation

Description of Affected Area

A brief description of the dominant species found within the vegetative communities crossed by the Proposed Action and their reclamation potential is presented below. Map C shows the general areas covered by these communities, with the exception of the riparian and pseudoriparian areas which were too small to show on the scale used. Specific localities where these two vegetative communities are found are given within the text.

1. Mesquite/Shrubland Community

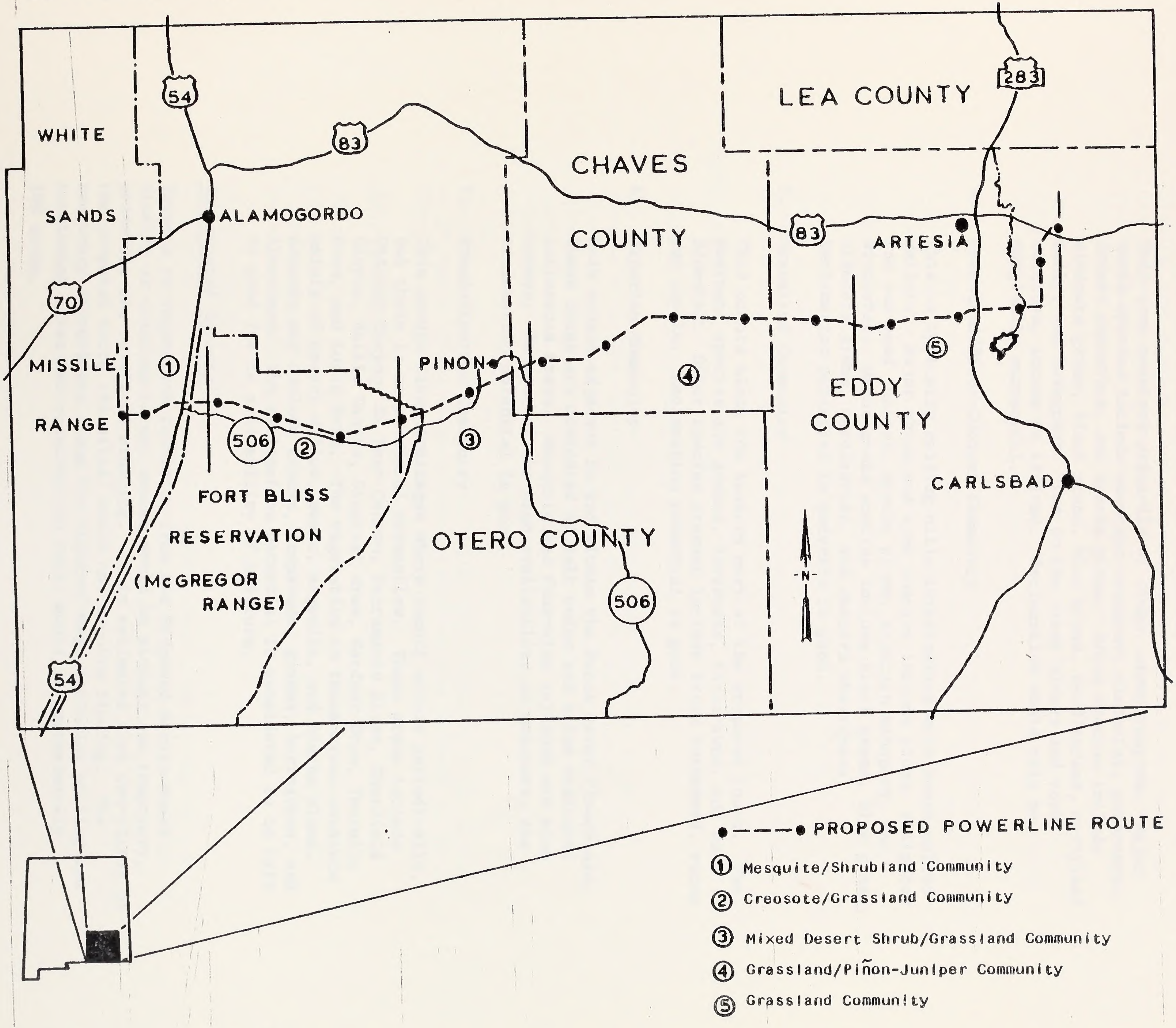
   This is found along the western portion of the route and consists primarily of mesquite, four-wing saltbush, broom snakeweed and yucca. Grass species include dropseeds, plains bristlegrass, tobosa, burrograss and bush muhly. The area is typified by nearly level to undulating hummocky sand dunes (coppice dunes) that make cross-country travel difficult. Because of the unstable soils, rough topography, and low amount of precipitation, range seeding or reclamation potential is low.

2. Creosote/Grassland Community

   This occurs primarily in the alluvial fan area of McGregor Range. Shrub species include creosote, mimosa, catclaw, mesquite, mariola, winterfat, yucca, and broom snakeweed. Grass species include gramas, dropseeds, tobosa, plains bristlegrass, burrograss, and bush muhly. The area is typified by alluvial fans bisected by numerous drainages. Reclamation potential is fair based on summer precipitation.

MAP C

EL PASO ELECTRIC'S PROPOSED 345 KV TRANSISSION LINE-VEGETATIVE COMMUNITIES



3. Mixed Desert Shrub/Grassland Community

   This area consists primarily of rough, steep canyons. Major shrub species include mountain mahogany, winterfat, goldeneye, desert ceanothus, and Apache plume. Grass species include sideoats grama, black grama, blue grama, needlegrass, curlyleaf muhly, and lovegrass. Due to the steep slopes and rock outcrops, access is limited. Reclamation would only be marginally successful.

4. Grassland/Pinon-Juniper Community

   This is typically rolling hills interspersed with broad upland valleys. Major shrub and tree species include pinon, alligator and one-seed juniper, Apache plume, mountain mahogany, and winterfat. Major grass species include black grama, blue grama, sideoats grama, needlegrass, and western wheatgrass. Reclamation potential is moderate to good.

5. Grassland Community

   This occurs along the eastern part of the proposed route. The dominant species are gramas, dropseeds, three-awns, and some bluestem. Other species present include broom snakeweed, yucca and cholla. Reclamation potential is good.

6. Riparian Community

   This occurs adjacent to and within the Pecos River floodplain. These areas are dominated by salt cedar and a few scattered cottonwood trees. Mesquite and four-wing saltbush are also common. Because of the high availability of moisture, the reclamation potential is good.

7. Pseudoriparian Community

   This occurs along drainages where runoff occurs periodically, but there is no perennial streamflow. These areas include Wildcat Canyon, El Paso Canyon, Sacramento River, Chatfield Canyon, Bullis Canyon, Siegrest Draw, Gardner Draw, Fourmile Draw, and Logan Draw. The vegetation in these areas consists mainly of desert willow, sumac, algerita, and Apache plume. Grasses may include tobosa, dropseeds, gramas, burrograss, and bluestems. The reclamation potential is considered to be fair to good due to availability of moisture.

Anticipated Impacts

Impacts to vegetation resulting from the Proposed Action where blading or clearing is not needed would be minimal and temporary, primarily the result of crushing. It is estimated that two-thirds of the proposed route (84 miles) would not require blading. The temporary disturbance along the right-of-way, including pulling and tensioning sites and construction pads, would be approximately 200 acres.

It is estimated that one-third of the proposed route (41 miles) would require some blading. Impacts would be more severe in these areas but not necessarily permanent. The disturbance along the right-of-way, including pulling and tensioning sites, storage sites and construction pads, would be approximately 104 acres.

Impacts to riparian areas would occur where the proposed route crosses the Pecos River. These include the clearing and temporary loss of up to 2 acres of riparian vegetation.

The total acreage which would be permanently impacted by the Proposed Action would be expected to be less than 10 acres. This does not include any permanent access roads which would have to be built outside of the right-of-way.

Recommended Mitigation

The mitigating measures known prior to the EA process (see Chapter 1) would adequately protect the vegetation along most of the proposed route. Where reseeding would be required, the seed mixtures and methods should be specified by the land owner or manager.

Water Resources and Floodplains

Description of Affected Area

The affected environment is one of limited rainfall, averaging between 8 and 14 inches per year. With the exception of the Pecos River, all streams which would be crossed are intermittent or ephemeral, flowing only after localized summer thundershowers or during winter cyclonic storms. Most flooding, other than that through narrow canyons, is shallow sheetflow resulting from local storms.

The Pecos floodplain is almost 2 miles wide where the proposed route is to cross. Those tower sites and access roads situated on the floodplain would be subjected to flooding.

Anticipated Impacts

The possibility of contamination to sediment and groundwater from dumping of waste material would exist. Also, channel disturbance from improper road design where roads cross drainage channels could cause an increased sediment load.

Recommended Mitigation

No dumping of any type of waste material would be allowed in order to prevent sediment and groundwater contamination. All roads should be designed to cross drainages as near to a 90° angle as possible to minimize channel disturbance.

The Bureau of Reclamation has specified certain measures for the Pecos River floodplain. These can be found in Chapter 1.

Livestock Grazing

Table 2 shows the type of livestock on each allotment crossed by the proposed right-of-way.

Anticipated Impacts

There would be no significant impacts to cattle grazing from the Proposed Action.

A possible impact to sheep would be the effect of construction during lambing season (approximately March 15 through June 15). Increased traffic and noise levels could result in a possible loss of lambs.

Recommended Mitigation

Construction should be postponed from March 15 to June 15 in areas where sheep are grazed if deemed necessary by the individual allottee. El Paso Electric should contact each allottee and get BLM approval before construction begins.

Noise

Description of Affected Area

There are no major receptors, such as schools or hospitals, in the vicinity of the proposed route.

Anticipated Impacts

Considerable nuisance noise generated by the intermittent use of heavy equipment would be audible during the construction phase of the project. Additionally, noise may be expected during normal operation of the substations and would probably reach higher levels during periods of high relative humidity. However, this noise level will be within State and Federal standards.

Recommended Mitigation

None

Social and Economic Conditions

Description of Affected Area

The communities whose social and economic conditions might be impacted by the Proposed Action include Artesia, Carlsbad and Alamogordo. In 1980, the communities of Artesia and Carlsbad had populations of 14,077 and 25,496, respectively, while Alamogordo had a population of 24,024. All three cities have experienced a fairly constant growth in population during recent years. Areas whigh might

TABLE 2
LIVESTOCK GRAZING

The following table shows the class of livestock on each allotment that the ROW crosses by district.

LAS CRUCES DISTRICT

ALLOTMENT	CATTLE	SHEEP
Roy Holcomb	X	
B. B. Johnson	X	
McGregor Range	X	
Brian Prather	X	X
Bill Taylor	X	X
S. E. Tanner	X	
W. A. Gage	X	X
Kennedy Oil Company	X	
J. P. Cauhape	X	X

ROSWELL DISTRICT

ALLOTMENT	CATTLE	SHEEP
Bogle Farms, Inc.	X	
J. W. Gissler	X	
R & W Netherlin	X	
M. B. Kincaid (Est.)	X	
Joe Helm	X	
Frank Runyan	X	
Inez & W. Crockett	X	X
George Casabonne	X	X
Johnny Casabonne	X	X
F V Cauhape (Est.)	X	X
Preston Means	X	X

For specific locations of the allotments mentioned, please contact the responsible BLM district offfice.

be impacted to lesser degree by this project include the smaller communities of Pinon and Orogrande and the sparsely settled area outside of Artesia. The populations in these areas have remained fairly constant during recent years.

Dominant economic forces in Eddy County include tourism, mining, oil and gas development, and ranching. Unemployment in the area has been low during the past ten years; however, recent setbacks in the mining industry have led to increased unemployment. That portion of Chaves County which would be traversed by the proposed right-of-way is dependent primarily on ranching and unemployment is low. The economy of Otero County is primarily dependent upon the military and related business as well as ranching.

Anticipated Impacts

The 30-65 person workforce required to build the power line would easily be able to find temporary housing in both the Artesia-Carlsbad area and in Alamogordo. Since the workforce would not be from a considerably different social group than the local population, the project is not expected to lead to conflicts in social mores or attitudes. The level of impacts to the human environment from construction or operation of the power line would be low and would not result in degradation of the quality of life. The positive impact of the Proposed Action would be to lower the energy fuel costs for the customers of EPE and TNP by reducing the use of gas and oil for generation. Additionally, the interconnection would provide diversification of energy sources and would increase the system reliability. This would safeguard against power outage which would have a detrimental effect on economic growth and quality of life.

NO ACTION ALTERNATIVE

The "No Action" Alternative would not result in any of the anticipated impacts previously identified for the Proposed Action. This alternative could result in increased energy prices for the consumers of EPE and TNP power as well as unreliability of power supply. No other impacts are anticipated for this alternative.

UNAVOIDABLE ADVERSE IMPACTS

Increased soil erosion and compaction and the crushing and removal of vegetation would be unavoidable during the construction phase. For the life of the project, there would be permanent removal of less than 10 acres of vegetation where pole structures are located and as a result of the construction of the substation. Natural succession would occur on disturbed areas, but the success of revegetation depends on the degree of surface (soil) disturbance, rainfall and the nature of use of the ROW after construction. Minor displacement of wildlife and destruction of wildlife habitat would occur. Some visual intrusion by the Proposed Action along major travel routes and at highway crossing D, and the minor disturbance of cultural sites along the ROW would also be unavoidable.

Wildlife

Description of Affected Environment

The plant communities previously described provide habitats for a varied faunistic composition throughout the area of the Proposed Action. Major riparian and pseudoriparian communities which would be affected by the Proposed Action have been mentioned in the description of vegetation. The structural diversity provided by the variety of plant species which are representative of these communities provides breaks in otherwise homogeneous communities of mesquite/shrubland, grassland and creosote/ grassland. These pseudoriparian and riparian areas exhibit greater densities of avafauna as well as greater species richness and are utilized by wildlife proportionately more than any other habitat types. The Pecos River drainage is identified as a natural corridor and is a major migration route for sandhill cranes, snow geese, waterfowl and rapters (personal communication, NMDGF).

Mule deer occupy habitats in all plant communities throughout the area of the proposed power line route; however, average densities in the grassland/pinon-juniper and mixed desert shrub/grassland are the highest, ranging from 10-16 deer per section (NMDGF overlays, 1981).

Anticipated Impacts

The direct impacts of line construction activities associated with the Proposed Action would be loss of habitat through ROW clearing (where it is done) and construction of access roads, assembly pads and conductor pulling sites. Human and mechanical disturbances associated with the construction phase would disperse wildlife in areas adjacent to and along the Proposed Action. Increased accessibility by man to previously inaccessible areas could lead to increased hunting pressure on present deer herds. Use of the maintenance roads along the power line by indiscriminant hunters might lead to the shooting of perching and nesting raptores. This could also be a problem where the proposed route crosses or parallels already established roads.

The aerial obstruction caused by lines crossing a major avian migration route such as the Pecos River could result in birds colliding with the wires.

Recommended Mitigation

The effects of clearing vegetation, particularly hardwoods, along the ROW in densely vegetated areas should be minimized by selecting alternate routes to avoid these areas, or by selective clearing after consultation with the BLM or land manager/owner. Impacts to vegetation should also be limited by making maximum use of existing roads and trails when crossing pseudoriparian and riparian habitats. An example of this situation occurs where the proposed route crosses Fourmile Draw and adequate access via existing roads makes it unnecessary to create new routes along the proposed ROW.

To lessen the probability of indiscriminate shooting of perching and nesting rapters as well as illegal taking of game caused by increased access, all access roads other than those used for maintenance should be closed to vehicular traffic after construction is complete.

Avian/power line collision is not a major concern except in the Pecos River area and adjacent east/west floodplain. The probability of migrating birds colliding with the power line in this area should be minimized by making the line more visible from a distance. The placement of aircraft visual detection devices spaced evenly on the line where it intersects the Pecos River and adjacent floodplain would be an acceptable preventive measure.

If, after construction of the power line, nests are built on transmission towers such that they would interfere with the operation of the line, appropriate mitigation should be developed on a case-by-case basis between the agencies and companies involved before any action is taken to remove the nest.

Threatened or Endangered Species

Description of Affected Environment

The area within the proposed right-of-way has no federally listed threatened or endangered plant species or state-sensitive plant species.

Habitat for the state-endangered (Group II) Bell's vireo has been identified within the Lower Pecos Valley. This specie utilizes dense shrubland or woodland along lowland stream courses as is characteristic of riparian vegetation along the Pecos River and pseudoriparian areas.

Other state-sensitive and federally listed wildlife may be present in the area of the Proposed Action, but it has been determined through informal consultation with the appropriate authorities that they will not be affected by this project.

Anticipated Impacts

Important and essential breeding, nesting and feeding habitat for the Bell's vireo would be destroyed where ROW clearing removes shrubby vegetation in the riparian communities of the Pecos River and other pseudoriparian communities. This could result in the displacement and decline of the species.

Recommended Mitigation

In order to avoid any long-term or short-term effects on future populations of Bell's vireo, mitigation measures previously stated relating to riparian and pseudoriparian habitats should be strictly

adhered to. If alternative routes are not feasible and shrubby vegetation must be removed, consultation and coordination between the BLM and the construction foreman should be initiated to avoid possible adverse impacts to the species.

Visual Resources

Description of Affected Area

There are four potential Visual Resource Management (VRM) classes with Class I areas requiring the most stringent protection and Class IV requiring the least. Visual resources along the proposed ROW are characterized by a variety of landscape types and constitute two VRM classes. Refer to Map D for the location of these classes along the proposed route.

The eastern portion of the affected area is typified by rolling prairie terrain. From Milepost (MP) 0 to MP11 the proposed ROW parallels the Pecos River before turning west and crossing the river at MP13. The proposed ROW parallels the major drainages from MP13 to MP36 as it climbs the gradually rising plains. Changes in the natural landscape associated with ranching operation and urban and water development have occurred along the first 20 miles of the proposed route. Except for where the proposed ROW crosses U.S. Highway 285 near Artesia, the frequency of travel through the area is low to moderate. Based on these factors, the VRM class between MP16 and MP19 is III while the VRM class from MP1 to MP16 and MP19 to MP36 is IV.

From MP36 to MP52, the plains crossed by the proposed route continue to rise, eventually changing to more rugged terrain. The proposed ROW descends from MP52 until it passes through Russell Gap and drops off the northernmost end of the Guadalupe Escarpment at MP61. From here to MP81 the proposed ROW crosses several low ridges and shallow canyons. Between MP81 and MP90 the proposed route passes through Chatfield Canyon which is characterized by several ridges rising 500 to 700 feet above the canyon floor. Ranching operations have caused few changes in the natural landscape and frequency of travel along the route is low to moderate. The area between MP76 and MP81 is seldom seen from major travel routes. For these reasons, the landscape from MP36 to 76 and MP81 to 90 are categorized as Class III while the management class between MP76 and MP81 is Class IV.

Between MP81 and MP107 the proposed ROW crosses rolling terrain along the northern edge of the Otero Mesa. From MP107 to 109 the proposed ROW descends 600 feet and then crosses the floor of the Tularosa Basin until its terminus at MP124. Ranching and military operations have had little effect upon the natural appearance on this portion of the route. The proposed route parallels State Highway 506 as far as MP117 (with the remainder of the line seldom being seen) and frequency of travel is moderate to high. For these reasons, the landscape between MP81 and MP107 is Class III, while the last 7 miles of the proposed route is Class IV.

[illegible] the process.

[illegible]

[illegible]

There are four potential Visual Resource Management (VRM) classes [illegible] along the proposed route.

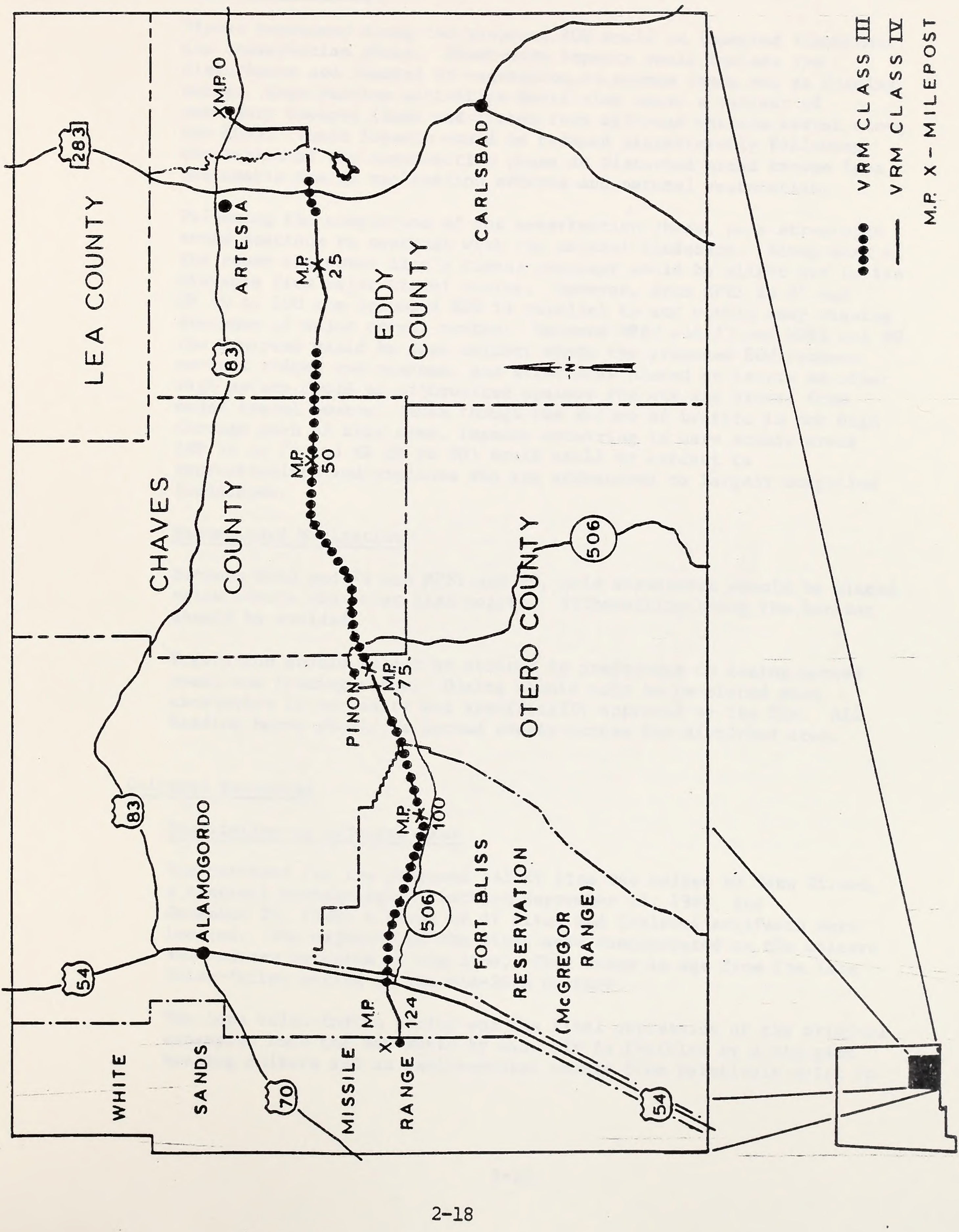
The eastern portion of the [illegible]

[illegible]

[illegible]

MAP D

EL PASO ELECTRIC'S PROPOSED 345 KV TRANSMISSION LINE-VISUAL RESOURCE MANAGEMENT CLASSES



Anticipated Impacts

Visual resources along the proposed ROW would be impacted throughout the construction phase. Short-term impacts would include the disturbance and removal of vegetation on access roads and at framing sites. Construction activities would also cause a variety of secondary impacts (dust and litter from off-road vehicle travel along the ROW). These impacts would be reduced significantly following completion of the construction phase as disturbed areas become less noticeable due to reclamation efforts and natural restoration.

Following the completion of the construction phase, pole structures would continue to contrast with the natural landscape. Along most of the route the power line's visual contrast would be slight due to its distance from major travel routes. However, from MP21 to 27 and MP 90 to 100 the proposed ROW is parallel to and within easy viewing distance of major travel routes. Between MP60 and 75 and MP81 and 90 the contrast would be most evident where the proposed ROW crosses several ridges and canyons, and structures placed on crests or other high points could be silhouetted against the sky and viewed from major travel routes. Even though the volume of traffic is not high through much of this area, impacts occurring in more scenit areas (MP 36 to 76 and MP 81 to 90) would still be evident to recreationists and visitors who are accustomed to largely unspoiled landscapes.

Recommended Mitigation

Between MP60 and 75 and MP81 and 90, pole structures should be placed below crests and other high points. Silhouetting along the horizon should be avoided.

Vegetation should be cut or crushed in preference to dozing access roads and framing sites. Dozing should only be permitted when excavation is necessary and specifically approved by the BLM. All blading berms should be spread evenly across the disturbed area.

Cultural Resources

Description of Affected Area

The corridor for the proposed 345 KV line was walked by John Wilson, a contract archaeologist, between September 15, 1982, and December 20, 1982; a total of 47 sites and isolated artifacts were located. The majority of the sites were concentrated on the western and eastern portions of the line. They range in age from the late Paleo-Indian period to the mid-20th Century.

The late Paleo-Indian period was the final expression of the original expansion into the New World by man. It is typified by a big game hunting culture and an environmental change from relatively moist to

increasingly arid. The Archaic period, which is represented by the bulk of the dated sites along the power line route, is characterized by pre-ceramic hunting and gathering bands traversing the countryside in a seasonal migration after floral and faunal resources. The Mogollan period is represented by increasingly permanent settlements and reliance on agricultural products. However, it is unlikely that at any time during the Mogollan period the seasonal gathering of plants and animals was neglected. There is strong indication that yearly mesquite bean and agave harvests were performed by Mogollan groups from large nucleated areas, resulting in the creation of gathering sites. Three of these probable gathering sites were located during the present survey. No Apache sites were located. The historic sites located represent early 20th Century homesteads which probably had fairly brief occupation and an early 1950's well pad.

Of the nonisolated artifact localities found during this survey, one is Paleo-Indian, six are Archaic, dating from 7000 to 500 B.C., three are Mogollan, dating from 500 B.C. to A.D. 1450, five are historic, and 22 are of unknown age. Many of these latter sites are seasonal gathering camps consisting of several eroded hearths and few or no artifacts.

Anticipated Impacts

The construction of large power lines can have several impacts on cultural resources. The clearing of the line would require crushing, scraping and some blading, depending upon vegetation and terrain. Vehicles would cause churning of sites and breakage of artifacts over a period of time. The scraping and blading would destroy any subsurface deposits and totally destroy artifact context. Based upon the site reports, five sites appear to be in fairly heavily vegetated areas where juniper is common. All of the other sites are in creosote or mesquite areas.

The laying out of supplies and actual tower construction and installation would not have a severe impact on sites unless they were in the immediate vicinity. Churning action resulting from the stringing and pulling of cable would impact any sites travelled over. Finally, over a period of time, the development of an access road along the power line would cause churning and gradual erosion of sites due to vehicular traffic.

Recommended Mitigation

No further mitigation is required on the following sites (Wilson, 1983) because they were either diagnostic artifacts collected during the initial survey or eroded and scattered hearths with no research potential:

EPE #1, 5, 6, 13, 14, 15, 16, 17, 19, 20, 21, 22, 24, 27,
32, 33 34, 35, 37, 38, 39, 40, 41, 43, 44, 45, 46

One site with diagnostic artifacts, EPE #28, was not collected during the initial survey. This site should be collected by a BLM field inspector and curated.

A number of sites contain artifacts and deposits that can potentially yield valuable research information. These sites should be flagged by an archaeologist familiar with them, and a vehicular corridor around or through the sites should be designated. If a permanent road may develop through the site, a fence should be built to deflect traffic away from the site. The following sites should be mitigated for in this manner:

EPE #7, 8, 9, 10, 11, 12, 23, 25, 26, 30, 31, 36, 42, 47

Sites 2, 3, and 4 contain Paleo-Indian and Archaic components that are rare in the Carlsbad area. Because of the possibility of unauthorized collection of artifacts and potential impacts from future maintenance activity, these sites should be entirely surface collected and several subsurface pits should be placed in them to determine the depth of the deposits and to collect samples for radiocarbon, pollen, and flotation analysis if suitable materials are present. The location and number of test pits should be chosen by the field archaeologist and should not encompass more than 10 percent of the site area.

The access roads and cable pulling stations should be cleared by a qualified contract archaeologist. As the actual pole locations are determined, they should be checked against the archaeological site locations. If the two coincide, the pole location should be moved to avoid the site.

RELATIONSHIP BETWEEN SHORT-TERM AND LONG-TERM PRODUCTIVITY

This section provides an analysis of the possible effects that implementation of the Proposed Action would have on the long-term productivity of the area. The life of the Proposed Action is anticipated to be 50 years. Therefore, the short-term period of use is defined as the 9 months necessary for construction. The effects of the Proposed Action on the long-term productivity of the environment are slight. The vegetative communities that would be crossed typically have a recovery rate of 5-15 years depending on climatic conditions. Some intrusion on visual resources would occur; no other significant losses of long-term productivity have been identified, other than those areas with permanent structures.

CHAPTER 3
CONSULTATION AND COORDINATION

The Scoping Process

Regulations for implementing the National Environmental Policy Act (40 CFR, Part 1501.7) require an early and open scoping process. During this process, the scope of issues to be analyzed and issues related to the Proposed Action were identified. The major purpose of the scoping process was to provide for better decisions. Information obtained during the scoping process was one of the sources used to identify impacts and alternatives to be addressed in the EA.

Additional purposes of the scoping process were to inform affected Federal, State and local agencies and other interested persons about the Proposed Action and to identify existing environmental reports and information related to the Proposed Action. Related consultation and review requirements were identified and addressed in Chapter 1 (Authorizing Actions).

The scoping process involved discussions with the public, resource specialists and managers of BLM and other relevant agencies. Comments were also solicited during public scoping meetings. A discussion of the result of scoping is presented below.

Scoping meetings were held in Artesia, New Mexico, on May 26, 1982, and Alamogordo, New Mexico, on May 27, 1982. A total of 27 announcements of the meetings were sent to the general public, user groups, and various Federal, state and local agencies and officials. A press release was also sent to various media in the area. In addition to BLM and EPE staff, a total of eight (8) persons attended the Artesia meeting, and two (2) members of the public attended the scoping meeting in Alamogordo. Several individuals at the public meeting did not want the proposed power line to cross their private land. Additionally, there was some concern expressed about the detrimental effects of line construction during lambing season.

During the scoping process, stipulations were developed by the Department of the Army for the section of the proposed ROW which crosses Fort Bliss Military Reservation (McGregor Range). Various mitigating measures were also developed by the Bureau of Reclamation for the land this agency manages in the Pecos River Floodplain.

As a result of the scoping process, EPE revised its proposed route to accommodate several landowners who did not want the power line to cross their private land. Additionally, part of the proposed route within the Fort Bliss Military Reservation was rerouted to the north at the request of the Department of the Army.

List of Preparers and Contributors

Preparers

This EA was prepared by the White Sands Resource Area, Las Cruces District Office. The following personnel were involved in the preparation of the document:

Konnie Andrews, Geologist, Team Leader
Ira Craig, Realty Specialist, Noise
Henry Diaz, Engineering Technician, Maps
Ben Fish, Budget Analyst, Technical Coordinator, Visual Resources
Sandra Hayes, Wildlife Biologist, Wildlife, Threatened or Endangered Species
Pete Laudeman, Archaeologist, Cultural Resources
Steve Park, Soil Scientist, Soils, Water Resources
Roy Placker, Range Conservationist, Vegetation, Livestock Grazing

Contributors

Personnel from the Carlsbad Resource Area, Roswell District Office include:

Scott Adams, Supervisory, Natural Resource Specialist, Visual Resources
Mike Fabio, Geologist, Geology
Lee Grover, Wildlife Biologist, Wildlife, Threatened or Endangere Species, Floodplains
Jack Ragsdale, Realty Specialist, Team Leader, Noise
Margaret Wilson, Range Conservationist, Vegetation, Soils, Livestock Grazing
Tom Zale, Archaeologist, Cultural Resources

Public Review of EA

This Environmenal Assessment is available for a thirty (30) day public review period. The availability of this document for review has been announced by a general news release. Additionally, a mailing to various agencies, groups and individuals informing them of the availability of the EA for public review has been made.

Following review of the Environmental Assessment, a Decision Document/Land Report will be prepared. This document will incorporate comments on and amendments to the EA. It is expected that a decision by the Las Cruces District Manager will be made on the issuance of a ROW grant in March, 1983.

APPENDIX A

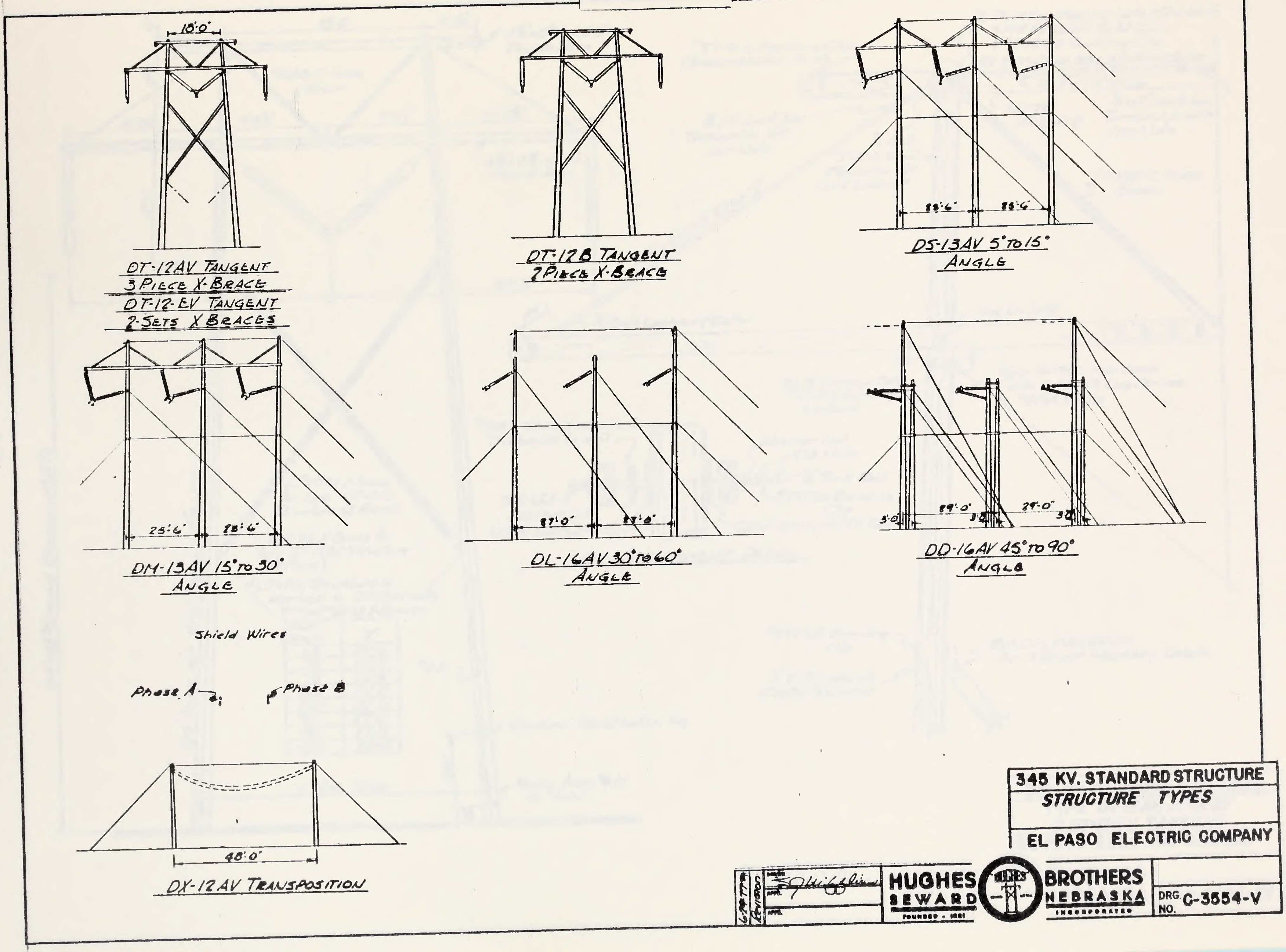
DESCRIPTION OF THE PROPOSED ACTION - SUPPLEMENTAL INFORMATION

Figure 1

Figure 2

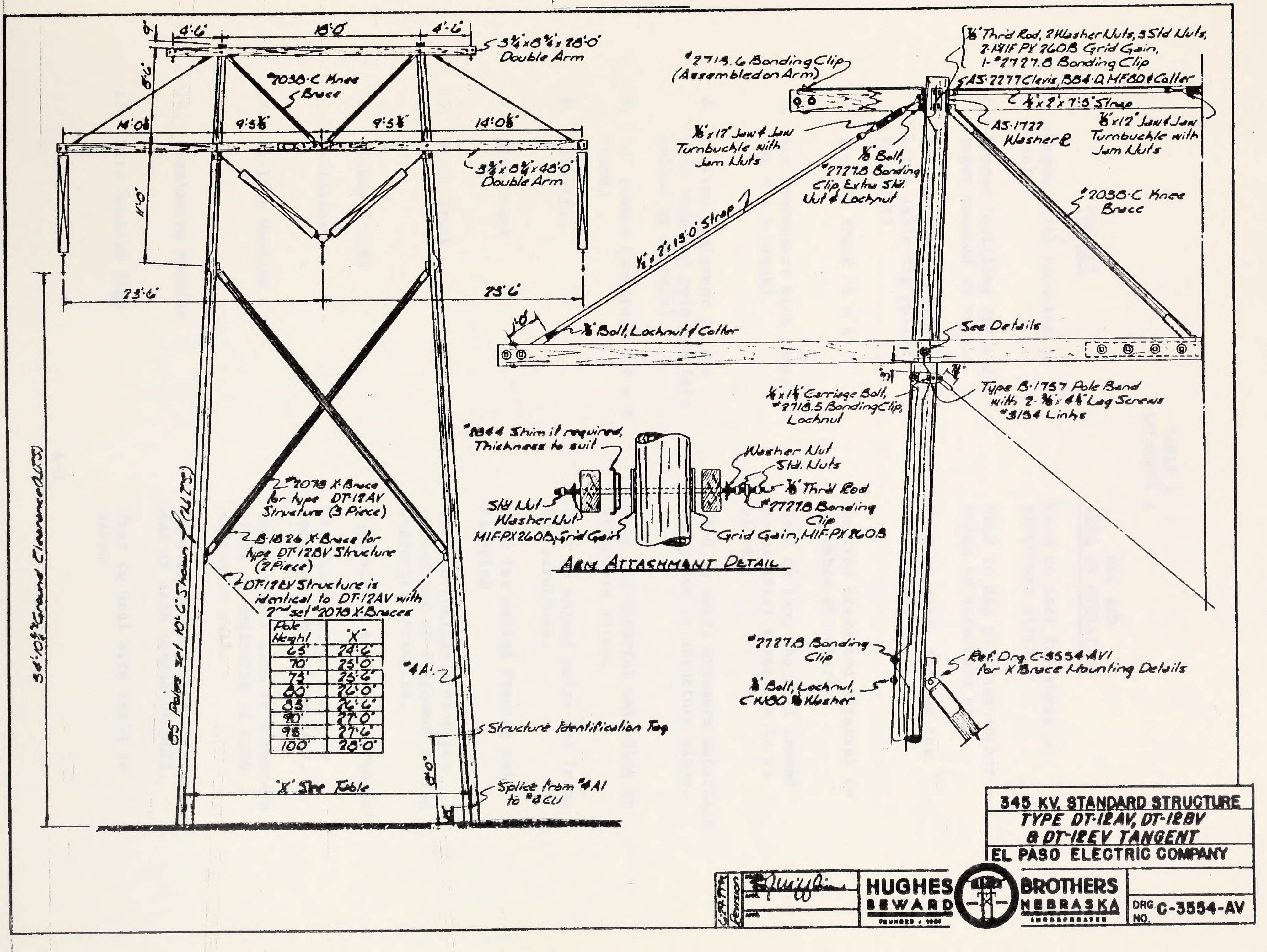
Table A

FIGURE 1
APPENDIX A



345 KV. STANDARD STRUCTURE
STRUCTURE TYPES
EL PASO ELECTRIC COMPANY
HUGHES SEWARD BROTHERS NEBRASKA
DRG. NO. C-3554-V

FIGURE 2
APPENDIX A



4'-6"
18'-0"
4'-6"
8'-6"
3¾"x8¾"x28'-0" Double Arm
#2038-C Knee Brace
14'-0⅜"
9'-3⅝"
9'-3⅝"
14'-0⅜"
3¾"x8¾"x48'-0" Double Arm
11'-0"
23'-6"
23'-6"
54'-10½" Ground Clearance (NTS)
#2078 X-Brace for type DT-12AV Structure (3 Piece)
B-1826 X-Brace for type DT-12BV Structure (2 Piece)
DT-12EV Structure is identical to DT-12AV with 2nd set #2078 X-Braces
85' Poles set 10'-6" Shown (NTS)
#4A1
Structure Identification Tag
8'-0"
'X' See Table
Splice from #4A1 to #8CU
⅝" Thrd Rod, 2 Washer Nuts, 3 Std Nuts, 2-M1F PX 260B Grid Gain, 1-#2727.8 Bonding Clip
#2718.6 Bonding Clip (Assembled on Arm)
AS-2277 Clevis, 384-Q HF80 & Collar
½"x2"x7'-5" Strap
AS-1727 Washer Ⓡ
⅝"x12" Jaw & Jaw Turnbuckle with Jam Nuts
⅝"x12" Jaw & Jaw Turnbuckle with Jam Nuts
⅝" Bolt, #2727.8 Bonding Clip, Extra Std. Nut & Locknut
#2038-C Knee Brace
½"x2"x15'-0" Strap
1'-0"
⅝" Bolt, Locknut & Collar
See Details
⅝"x1½" Carriage Bolt, #2718.5 Bonding Clip, Locknut
Type B-1757 Pole Band with 2-⅝"x4½" Lag Screws #3134 Links
#2844 Shim if required, Thickness to suit
Washer Nut
Std. Nuts
⅝" Thrd Rod
#2727.8 Bonding Clip
Std Nut
Washer Nut
M1F-PX260B Grid Gain
Grid Gain, M1F-PX260B
ARM ATTACHMENT DETAIL
#2727.8 Bonding Clip
⅝" Bolt, Locknut, CW80 ⅝" Washer
Ref. Drg. C-3554-AV1 for X Brace Mounting Details
345 KV. STANDARD STRUCTURE
TYPE DT-12AV, DT-12BV & DT-12EV TANGENT
EL PASO ELECTRIC COMPANY
HUGHES BROTHERS
SEWARD NEBRASKA
FOUNDED 1921
INCORPORATED
DRG NO. C-3554-AV

Pole Height	'X'
65'	24'-6"
70'	25'-0"
75'	25'-6"
80'	26'-0"
85'	26'-6"
90'	27'-0"
95'	27'-6"
100'	28'-0"

TABLE 1
APPENDIX A

	VEHICLE	USE AND AREA OF OPERATION
1.	Wagon drill (mounted on cat)	Used to test for rocks on structure sites.
2.	Digger (drilling rig and auger mounted on cat)	Used to dig pole and anchor holes on structure site.
3.	Setting rig (a crane or large cable rig pulled by a cat)	Used to raise and set the structures.
4.	Framing truck (6 x 6)	Carrier crews and material to assemble structures.
5.	Air compressor with tamps (on 6 x 6 truck)	Used to tamp the soil around poles after structure is in place.
6.	Hauling equipment (large flat beds and pole trailers pulled by diesels)	Used to carry crossarm materials and poles to structure sites.
7.	"A" frames (mounted on 6 x 6 truck)	Used for material unloading at structure sites.
8.	Forklifts	Used to unload poles and frame the structure.
9.	High reach	Used for aerial framing and clipping.
10.	Winch Truck	Used to realign structures pulled out of alignment during conductor stringing.
11.	Pickup Trucks	Supervisory and other personnel.
12.	Bulldozer's	Used to clear or grade in locations where necessary.
13.	Pulling Machine	Used to pull line at structure sites at beginning of each conductor pull.
14.	Tensioning Machine	Used to tension line at sites at end of each conductor pull.
15.	Wire Hauling Rigs	Used to haul wire reels to sites.

APPENDIX B

DRAFT COMPLIANCE/MONITORING PLAN

The White Sands and Carlsbad Resource Areas are responsible for the compliance/monitoring of the proposed ROW within their respective resource areas. Each Resource Area would prepare a compliance/monitoring plan in accordance with the BLM 2064 Manual. The Las Cruces and Roswell District Offices are responsible for quality control of the compliance/monitoring effort. It is estimated that a total of eight work months would be required for the compliance/monitoring effort, three work months for each Resource Area and one work month for each District Office.

The compliance/monitoring plans developed by each Resource Area should specify such items as:

1) The project inspector/monitor responsible for compliance supervision and the monitoring studies and documentation.

2) A schedule for compliance inspection which considers the various construction phases, stipulations, and time lapse.

3) A monitoring plan which considers special treatment areas for study and comparison, photo points, a monitoring inspection schedule, and information feedback.

REFERENCES

Fuller, Wallace H. 1975. Management of Southwestern Desert Soils. University of Arizona Press.

Hubbard, John. 1983. Personal communication. New Mexico Department of Game & Fish. Santa Fe, New Mexico.

New Mexico Department of Game & Fish. 1981. Herd Density Overlays. Santa Fe, New Mexico.

Olendorft, R., A. Miller and R. Lehman. 1981. Suggested Practices for Raptor Protection on Power Lines. Raptor Research Foundation, c/o Department of Veterinary Biology, University of Minnesota. St. Paul, Minnesota.

Pacific Southwest Inter-Agency Committee. 1968. Factors Affecting Sediment Yield and Measures for the Reduction of Erosion and Sediment Yield.

USDA - Soil Conservation Service. 1971. Soil Survey. Eddy Area, New Mexico.

USDA - Soil Conservation Service. 1979. Important Farmland Maps.

USDA - Soil Conservation Service. 1981. Soil Survey. Otero Area, New Mexico.

USDA - Soil Conservation Service. 1981. Soil Survey. Chaves Area, New Mexico.

Wilson, John P. Archaeological Consultant, Las Cruces, New Mexico

Bureau of Land Management
Library
Bldg. 50, Denver Federal Center
Denver, CO 80225

NTAL ASSESSME

ECTRIC COMPAN

MISS N

ND E COU TIES, NE ICO